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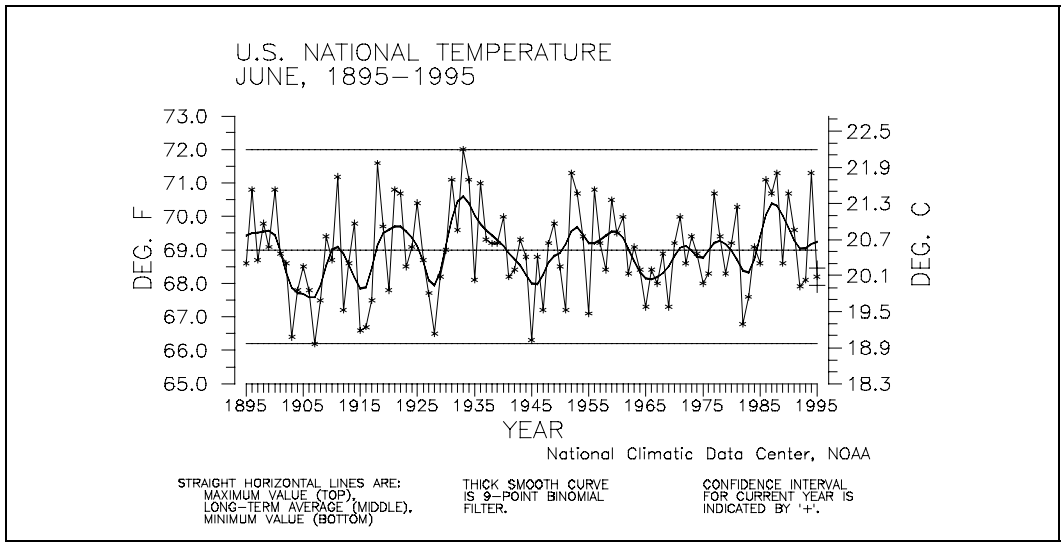
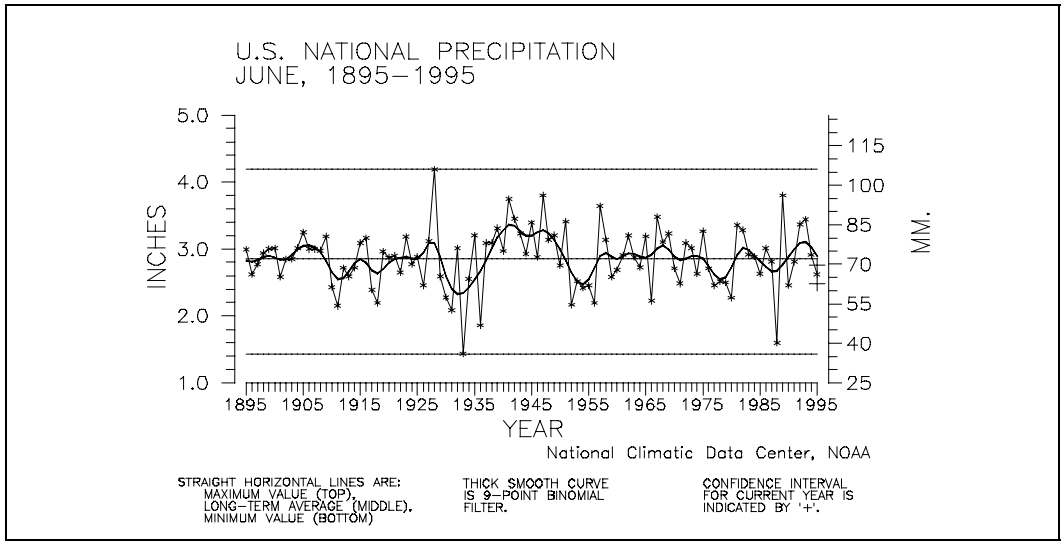
CLIMATE VARIATIONS BULLETIN





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This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Analysis Center, and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

The narrative, tables, and graphs in the CVB are also available via automated facsimile. The previous month's summary can be obtained after the tenth of the month by dialing 704-271-4570 and selecting the appropriate menu codes. A touch-tone fax machine is required.

If you have access to the Internet, copies of the CVB are available via both the NCDC's World Wide Web (WWW) server and the NCDC's anonymous FTP server.

NCDC's WWW server
URL for the CVB: http://www.ncdc.noaa.gov/publications/cvb/cvb.html

NCDC's anonymous FTP server
Machine: ftp.ncdc.noaa.gov
Directory: /pub/data/cvb

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES JUNE CLIMATE IN HISTORICAL PERSPECTIVE

William O. Brown
National Climatic Data Center, NOAA
Global Climate Lab, Global Analysis Branch
Federal Building
Asheville, NC 28801 USA

Preliminary data for June 1995 indicate that temperature averaged across the contiguous United States was below the long-term mean (see Figure 1). June 1995, with an averaged temperature of 68.2° (F), ranked as the 26th coolest June since national records began in 1895. The 1995 value is based on preliminary data, which has been shown to be within 0.26°F (0.14°C) of the final data over a 46-month period. This confidence interval is indicated in the figure by '+'. The darker smooth curve is a nine-point binomial filter that averages out the year-to-year fluctuations and shows the longer-term variations. Only 8.4% of the country averaged much warmer than normal while 20.8% of the country averaged much colder than normal for June 1995.

Areally-averaged precipitation for the nation was below the long-term mean, ranking June 1995 as the 28th driest June on record. The preliminary value for precipitation is estimated to be accurate to within 0.14 inches (3.56 millimeters) and the confidence interval is plotted in Figure 2 as a '+'. Over a fifth (22.8%) of the country experienced much drier than normal conditions while 15.5% was much wetter than normal.

Historical precipitation is shown in a different way in Figure 3. The June precipitation for each climate division in the contiguous U.S. was first standardized using the gamma distribution over the 1931-90 period. These gamma-standardized values were then weighted by area and averaged to determine a national standardized precipitation value. These national weighted values were then normalized over their period of record. Negative values are drier and positive values are wetter than the mean. This index gives a more accurate indication of how precipitation across the country compares to the local normal (60-year average) climate. The national standardized precipitation ranked June 1995 as the 33rd driest such month on record.

In order to show more of a historical perspective, the precipitation and temperature rankings for the periods June 1995, May-June 1995, January-June 1995, and July 1994-June 1995 for the nine climatically homogeneous regions, as well as the national rankings, are listed in Table 1.

The regional rankings for temperature for the month of June indicate that the Southwest region had their fourth coolest June since 1895 (Figure 11) and it was the tenth coolest June for the West region as well as the South region. The Southeast region had their 16th coolest June since 1895. To the other extreme, it was the sixth warmest June since records began for the East-North Central region (Figure 12) and the 14th warmest June since 1895 for the Northeast region.

June 1995 continued the trend of much drier than normal conditions for the Northeast region. This was the third driest June on record (Figure 13) for the region. The two-month period, May-June, as well as the year-to-date each are also the third driest such periods on record for the Northeast region. It was the eighth driest June since 1895 for the East-North Central region. June 1995 was the eighth wettest such month in the 101-year period of record for the West region (Figure 14) and contrasts sharply with the near-record dryness of June 1994. The 1995 year-to-date is the wettest January-June on record for the West region, which includes the states of California and Nevada.

National averaged temperature for the five month period January-June for 1895-1995 is shown in Figure 4. The January-June 1995 temperature was above the long-term mean ranking as the 22nd warmest such period since 1895. Nine of the last ten such January through June periods have had temperatures above to much-above the long-term mean including the warmest year-to-date on record in 1986.

Figure 5 shows the historical January-June national averaged precipitation. The year-to-date for 1995 was the 16th wettest such six-month period since records began. Five of the last seven January-June periods averaged above to much above normal, which stands in sharp contrast to the dryness of the mid to

late 1980's. When the local normal climate is taken into account, January-June 1995 ranked as the 18th wettest such period since 1895 (Figure 6).

Figure 7A shows, in illustrative map form, the June 1995 temperature rankings for the 48 contiguous states. Seven states were within the top ten warm of the historical distribution for the month of June including the third warmest June on record for Wisconsin, fourth warmest for Minnesota and Vermont, fifth warmest for Michigan, eighth warmest for New Hampshire and New York, and ninth warmest for North Dakota. Eight other states were within the warm third of the historical distribution. June 1995 was the second coolest such month on record for Colorado and Utah, seventh coolest for Nevada, and eighth coolest for Oklahoma. Nineteen other states were within the cool third of the historical distribution.

June 1995 state ranks for precipitation are shown in Figure 7B. It was the wettest June on record for North Carolina, and the sixth wettest June since 1895 for both California and Idaho. Seven other states were within the wet-third of the historical distribution. Incidentally, it was just two months ago that North Carolina had the third driest April on record. Fourteen states had their top ten driest or drier June on record including the driest June since records began for Vermont. It was the third driest June on record for Arizona, Connecticut, and Massachusetts, the fourth driest for Wisconsin and the fifth driest on record for Delaware, Michigan, New Mexico, and New York. Nine other states were within the dry third of the historical distribution. It must be stressed that, when the final values for precipitation are calculated, these ranks *WILL* change due to the use of a denser station network. ***It should also be noted that the June state precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.***

State temperature and precipitation ranks for the six-month period, January-June 1995, are shown in map form in Figures 8A and 8B. No states were within the cool or warm top ten category nor within the cool third of the historical distribution. However, 23 states rank within the warm third of the historical distribution for 1995 thus far. It was the driest year-to-date for New Jersey and the second driest January-June period for New York and Pennsylvania. It was the third driest January-June period for Vermont, fourth driest for Massachusetts, seventh driest for Maryland, and ninth driest year-to-date for Connecticut and New Hampshire. Nine other states were within the dry-third of the historical distribution. It was the second wettest year-to-date for California and Colorado, fourth wettest for Utah, fifth wettest for Nevada, sixth wettest for South Dakota, and seventh wettest for Idaho and Kansas. Eleven other states are within the wet third of the distribution.

There was a slight increase in both the national percent area of severe to extreme long-term drought and severe to extreme long-term wet spell for June 1995. Nationally, long-term drought conditions (as defined by the Palmer Drought Index) for June 1995 increased to 2.7% of the country while the percent coverage of severe to extreme wet area jumped to over a quarter of the country (28.8%, Figure 9). Table 2 lists the precipitation ranks and statistics for selected river basins for the 1994-1995 Hydrologic Year thus far. The core wet areas included the northern and central Great Plains, the central and southern Rockies, the Great Basin, and California. The Palmer dry areas included parts of the southern High Plains, western and southern Texas, mid-Atlantic, upper Great Lakes region, all of the Northeast region, and portions of the interior Southeast.

Table 3 shows extremes, 1961-90 normals, and the June 1995 values for both precipitation and temperature for the nine regions and the contiguous U.S.

Precipitation averaged across the Primary Corn and Soybean Belt was above normal for the four-month growing season to date (Figure 10).

According to preliminary data from the National Weather Service's National Severe Storms Forecast Center, there were 230 tornadoes across the contiguous United States in June 1995. The 1953-1994 average tornado count for June is 168. For the year-to-date, 938 tornadoes have occurred. The average tornado count for the January-June period is 533. The January-June extremes are 956 in 1991 and 302 in 1988. It should be noted that the preliminary tornado count is generally higher than the final count.

TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1995. 1 = DRIEST/COLDEST, 101 = WETTEST/WARMEST FOR JUNE 1995, 101 = WETTEST/WARMEST FOR MAY-JUNE 1995, 101 = WETTEST/WARMEST FOR JAN-JUNE 1995, 100 = WETTEST/WARMEST FOR JUL 1994-JUNE 1995.

REGION	JUN 1995	MAY-JUN 1995	JAN-JUN 1995	JUL 1994-JUN 1995
PRECIPITATION:				
NORTHEAST	3	3	3	7
EAST NORTH CENTRAL	8	14	33	47
CENTRAL	38	93	73	50
SOUTHEAST	70	46	39	76
WEST NORTH CENTRAL	52	77	83	90
SOUTH	39	63	68	74
SOUTHWEST	60	82	91	79
NORTHWEST	74	48	85	47
WEST	94	87	101	99
NATIONAL	28	65	86	85
TEMPERATURE:				
NORTHEAST	88	72	75	90
EAST NORTH CENTRAL	96	80	73	90
CENTRAL	58	50	59	75
SOUTHEAST	16	52	62	66
WEST NORTH CENTRAL	49	23	65	75
SOUTH	10	16	61	70
SOUTHWEST	4	3	66	81
NORTHWEST	39	54	88	90
WEST	10	9	72	62
NATIONAL	26	13	80	87

TABLE 2.
STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCT-JUNE 1994-95, WHERE RANK OF 1 = DRIEST, 100 = WETTEST, BASED ON THE PERIOD 1895 TO 1995, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF JUNE 1995.
RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK	% AREA DRY	% AREA WET
MISSOURI BASIN	97	.0%	48.6%
PACIFIC NORTHWEST BASIN	87	.0%	26.6%
CALIFORNIA RIVER BASIN	98	.0%	64.6%
GREAT BASIN	100	.0%	45.3%
UPPER COLORADO BASIN	97	.0%	76.3%
LOWER COLORADO BASIN	90	.0%	71.7%
RIO GRANDE BASIN	65	12.7%	30.2%
ARKANSAS-WHITE-RED BASIN	88	6.7%	31.5%
TEXAS GULF COAST BASIN	91	.0%	.0%
SOURIS-RED-RAINY BASIN	71	.0%	59.2%
UPPER MISSISSIPPI BASIN	77	.0%	22.7%
LOWER MISSISSIPPI BASIN	57	.0%	5.5%
GREAT LAKES BASIN	13	12.4%	.0%
OHIO RIVER BASIN	40	.4%	8.2%
TENNESSEE RIVER BASIN	39	.0%	.0%
NEW ENGLAND BASIN	8	12.2%	.0%
MID-ATLANTIC BASIN	2	16.7%	.0%
SOUTH ATLANTIC-GULF BASIN	67	.0%	1.3%

TABLE 3. EXTREMES, 1961-90 NORMALS, AND 1995 VALUES FOR JUNE

	PRECIPITATION (INCHES)					
	DRIEST		WETTEST		NORMAL	1995
REGION	VALUE	YEAR	VALUE	YEAR	PCPN	PCPN
NORTHEAST	1.60	1988	8.53	1972	3.84	1.89
EAST NORTH CENTRAL	1.41	1910	6.68	1967	3.89	2.40
CENTRAL	1.03	1988	9.10	1928	3.95	3.80
SOUTHEAST	2.20	1931	8.37	1900	4.86	5.56
WEST NORTH CENTRAL	1.25	1933	5.27	1947	2.73	2.80
SOUTH	.98	1933	6.85	1989	3.66	3.08
SOUTHWEST	.16	1916	1.93	1927	.93	.89
NORTHWEST	.32	1919	3.02	1947	1.48	1.87
WEST	.01	1935	1.14	1963	.46	.86
NATIONAL	1.43	1933	4.19	1928	2.84	2.62

	TEMPERATURE (DEGREES F)					
	COLDEST		WARMEST		NORMAL	1995
REGION	VALUE	YEAR	VALUE	YEAR	TEMP	TEMP
NORTHEAST	60.3	1958	68.6	1943	64.4	67.0
EAST NORTH CENTRAL	59.5	1969	72.4	1933	65.3	69.3
CENTRAL	66.2	1903	77.6	1952	71.3	72.2
SOUTHEAST	73.0	1955	80.8	1952	75.8	75.1
WEST NORTH CENTRAL	56.7	1951	71.6	1988	63.2	62.2
SOUTH	72.1	1903	83.8	1953	77.6	76.0
SOUTHWEST	63.4	1907	72.8	1994	68.1	64.7
NORTHWEST	54.9	1953	64.8	1918	59.9	58.2
WEST	62.2	1944	74.0	1918	67.7	64.2
NATIONAL	66.2	1907	72.0	1933	69.0	68.2

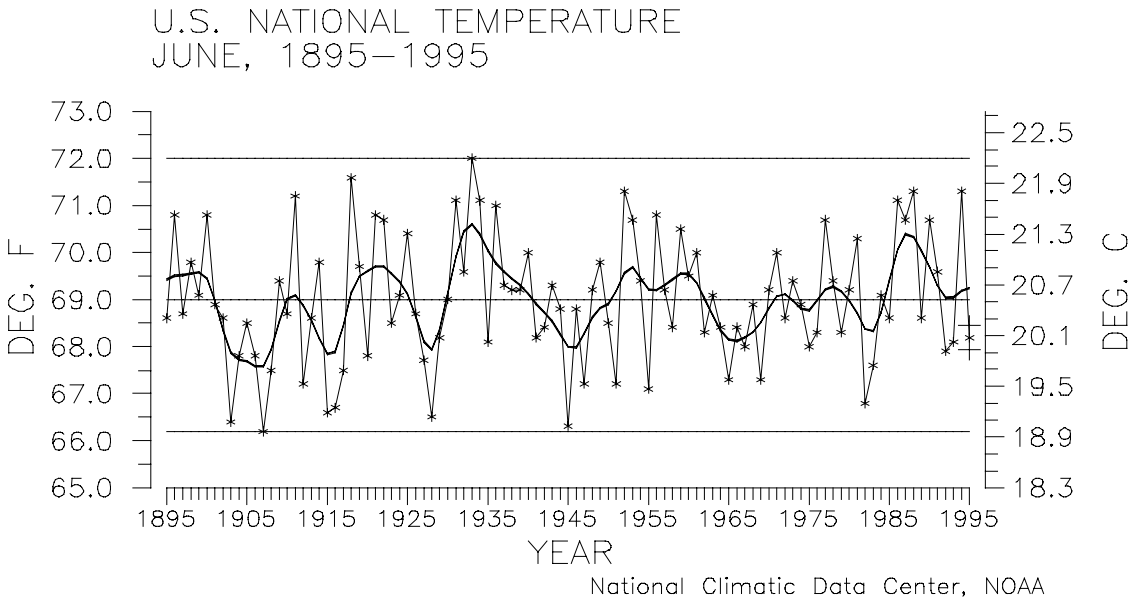


Figure 1

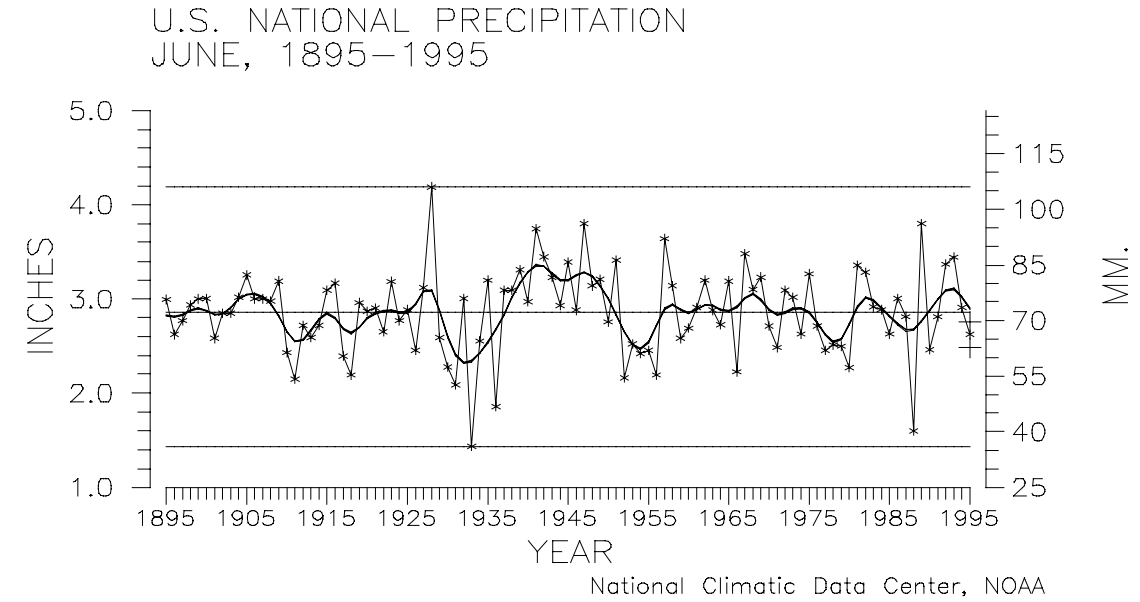


Figure 2

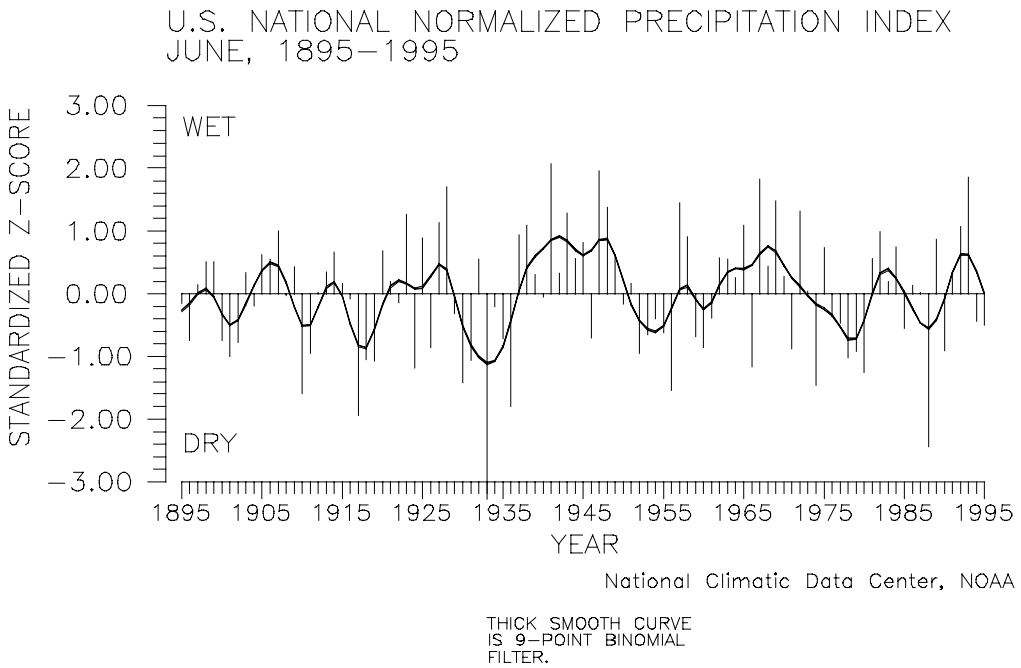


Figure 3

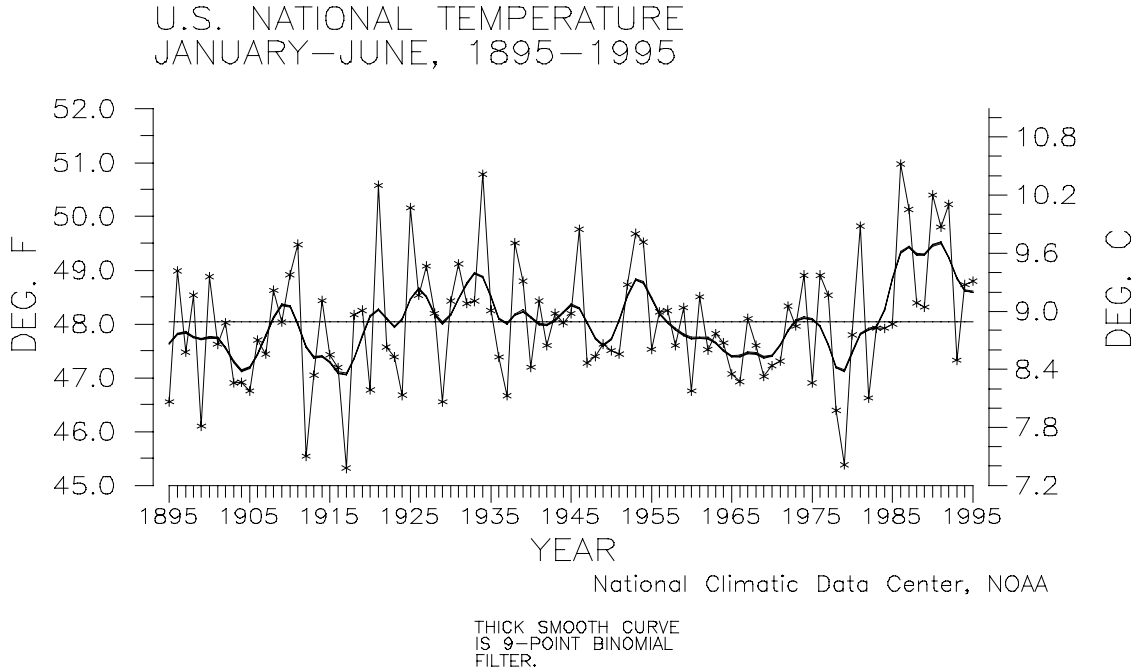
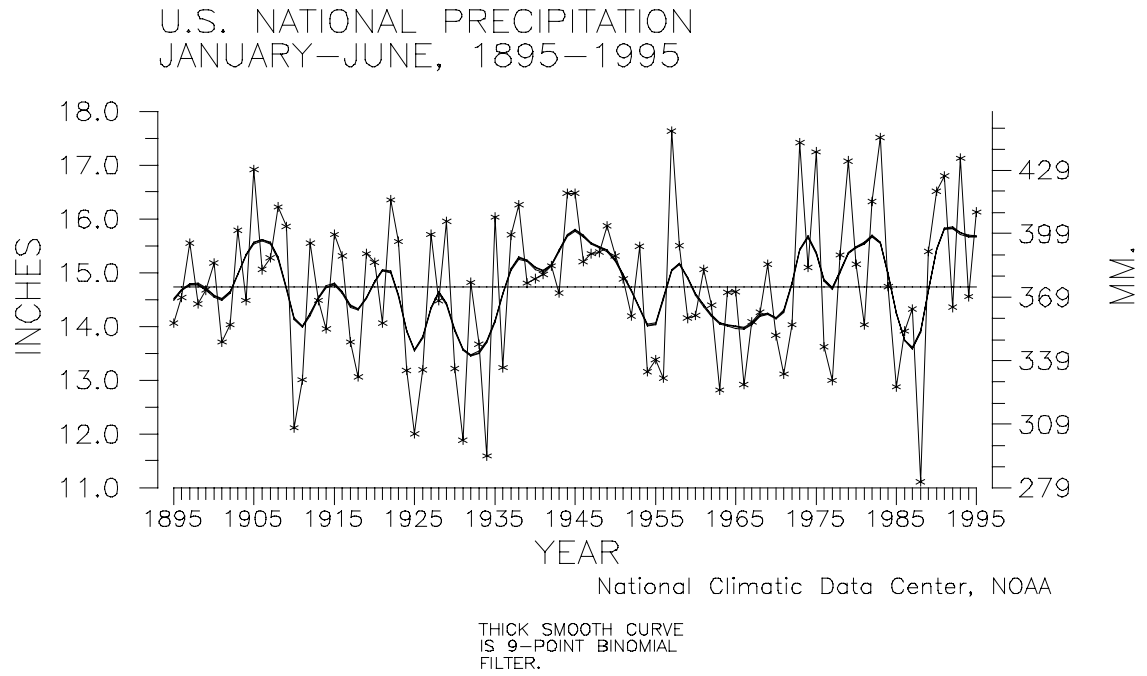


Figure 4



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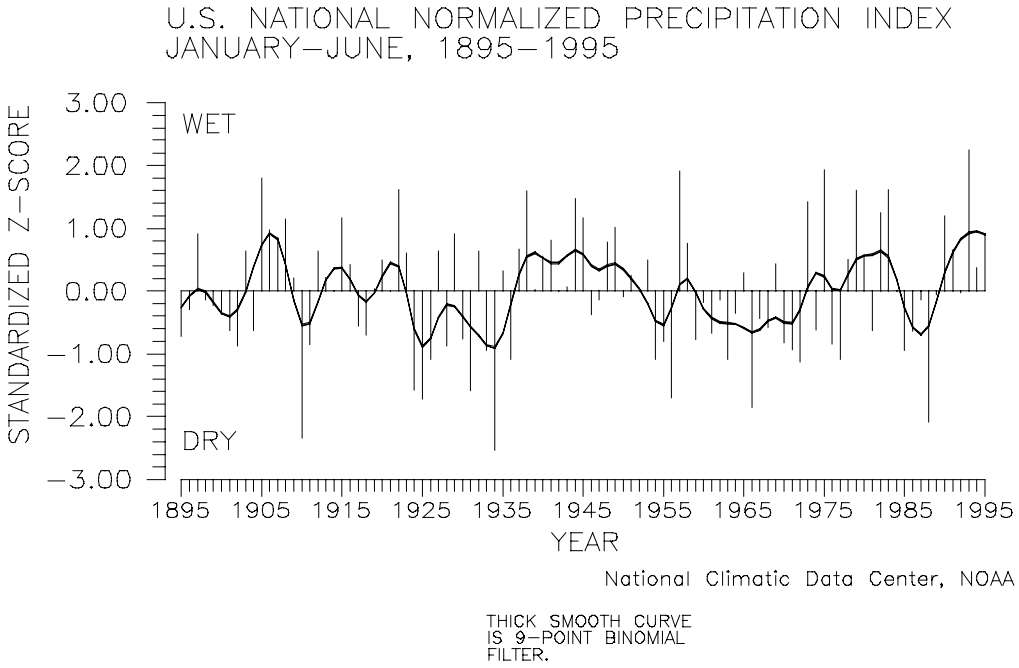

Figure 6

JUNE 1995 STATEWIDE RANKS

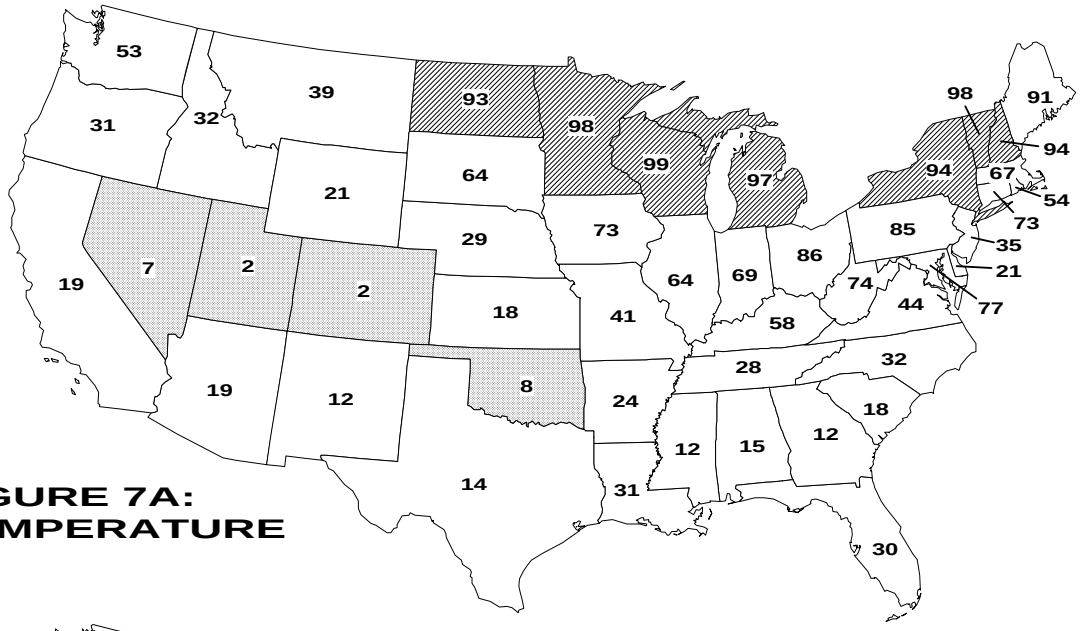

FIGURE 7A: TEMPERATURE

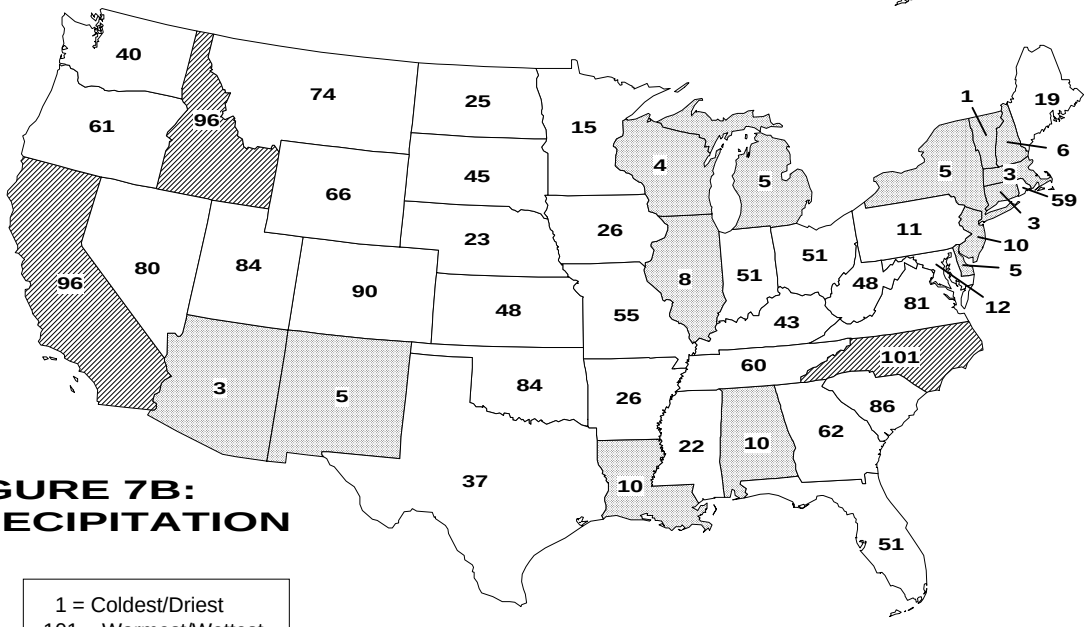

FIGURE 7B: PRECIPITATION

1 = Coldest/Driest
101 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

JAN-JUNE 1995 STATEWIDE RANKS

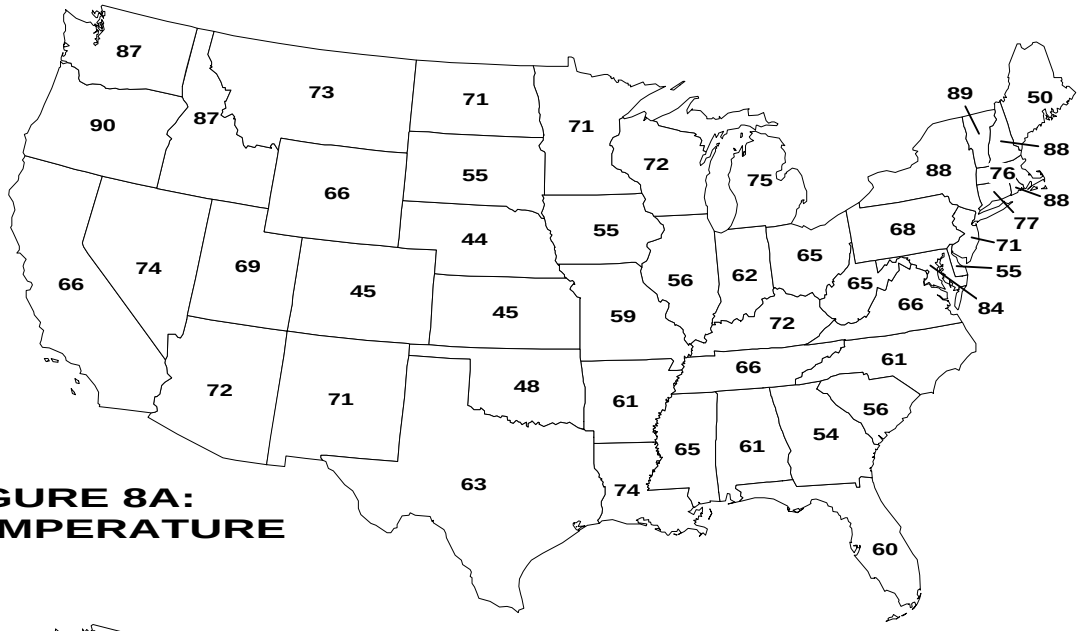

FIGURE 8A: TEMPERATURE

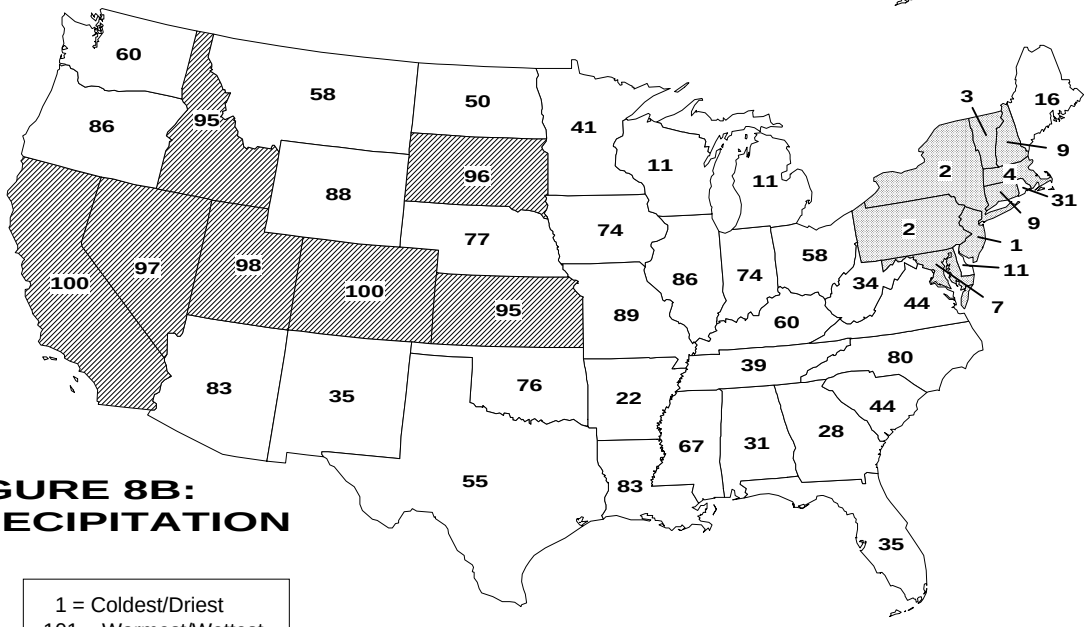

FIGURE 8B: PRECIPITATION

1 = Coldest/Driest
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National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

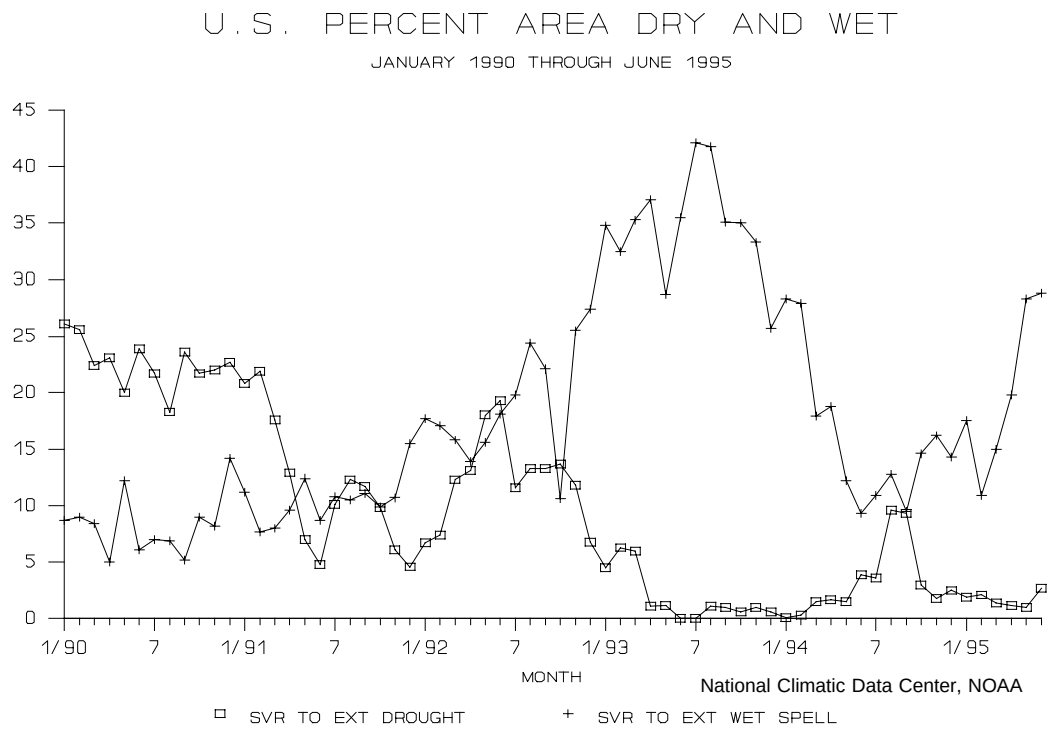


Figure 9

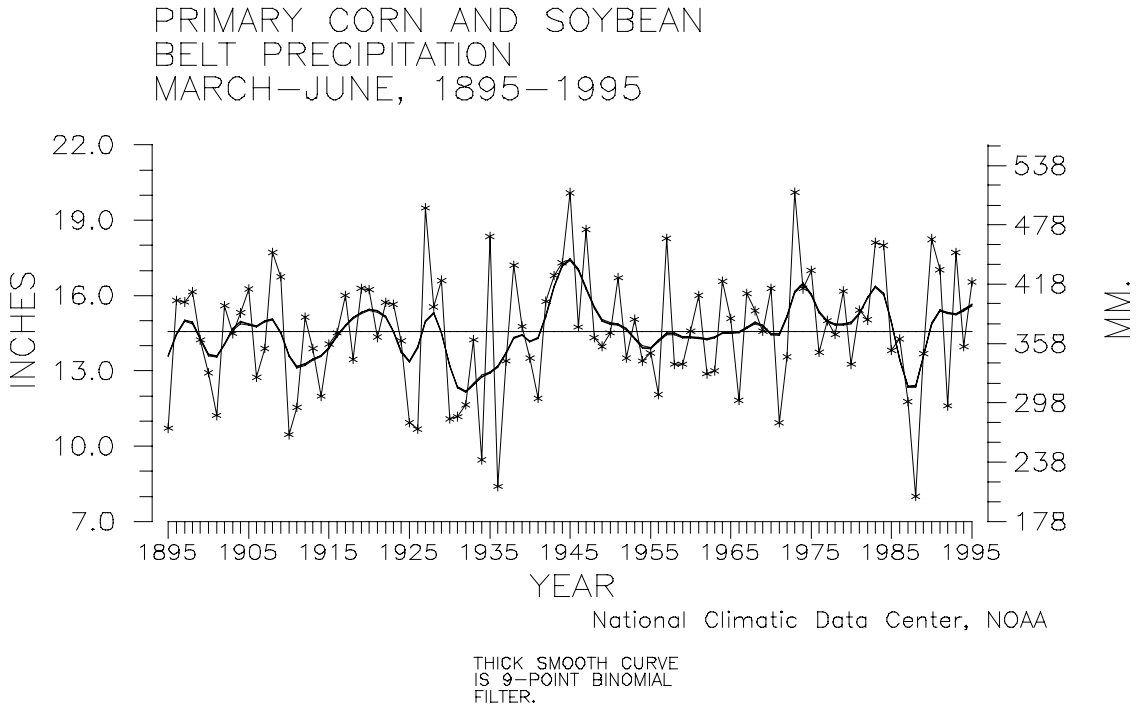


Figure 10

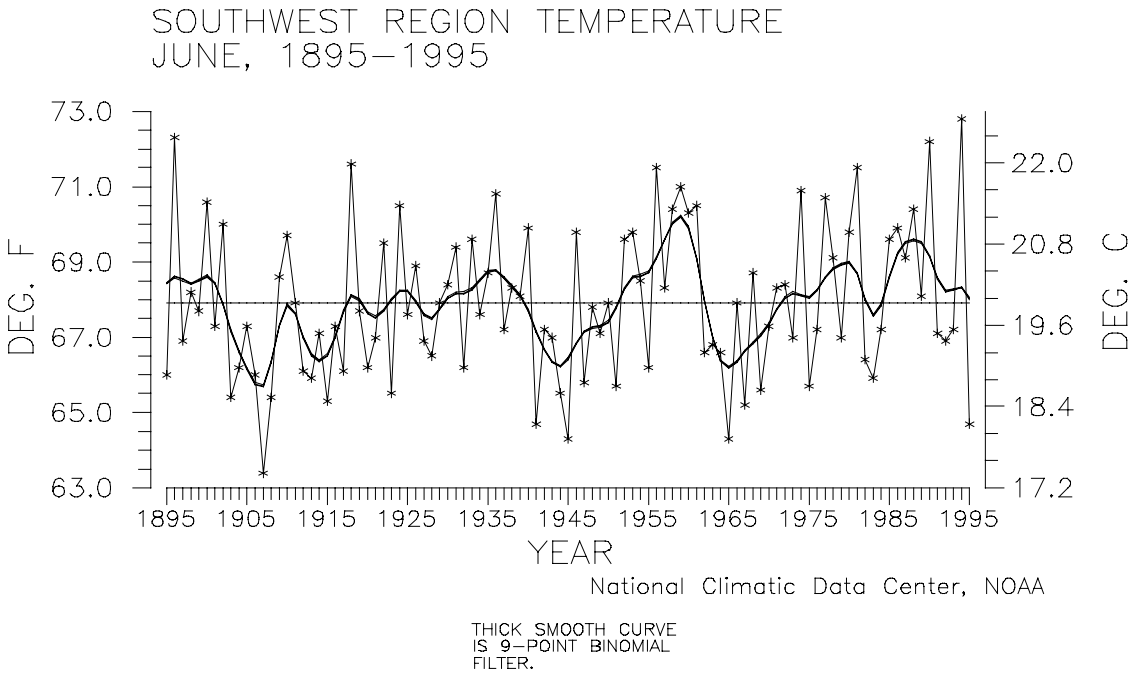
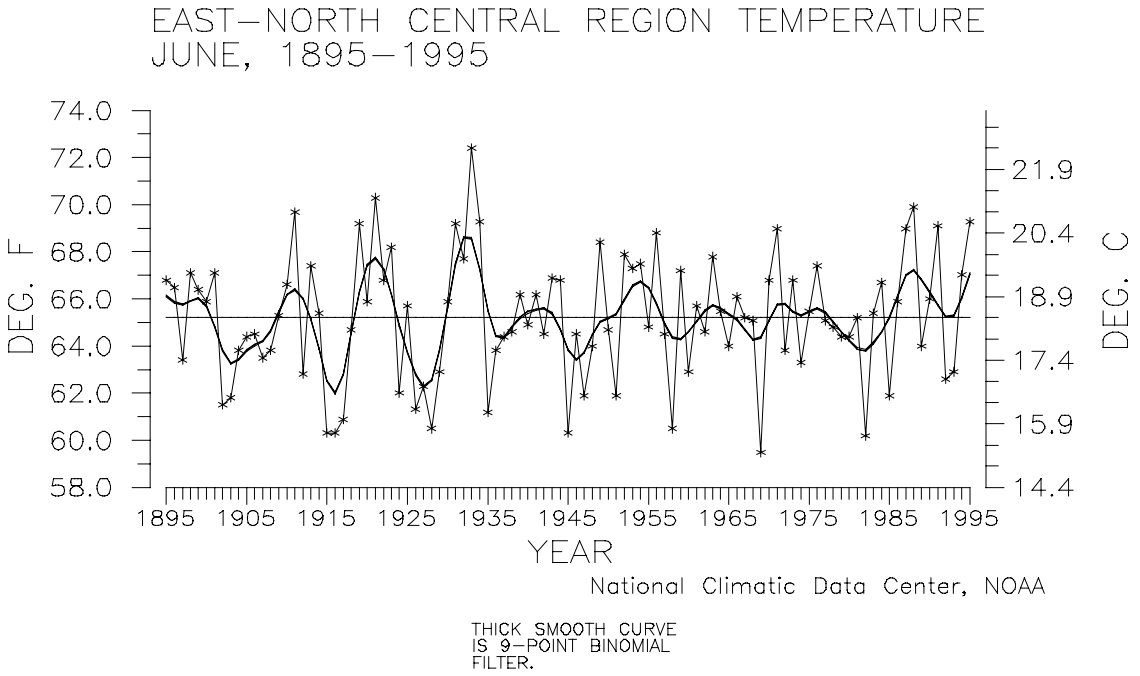


Figure 11



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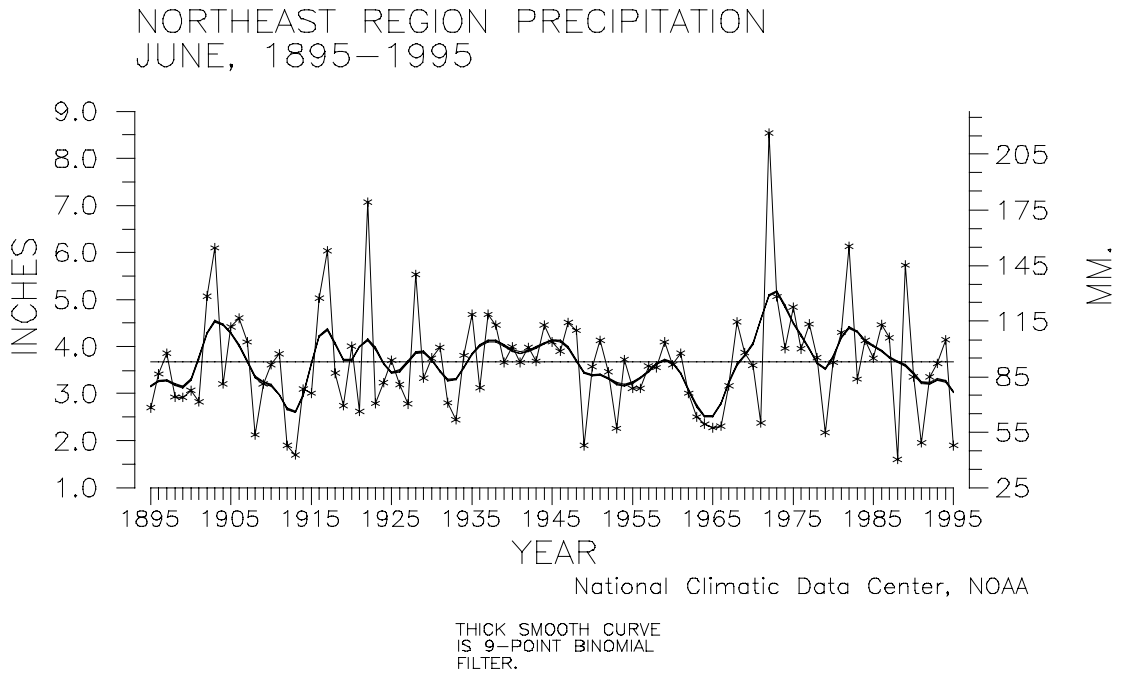

Figure 13

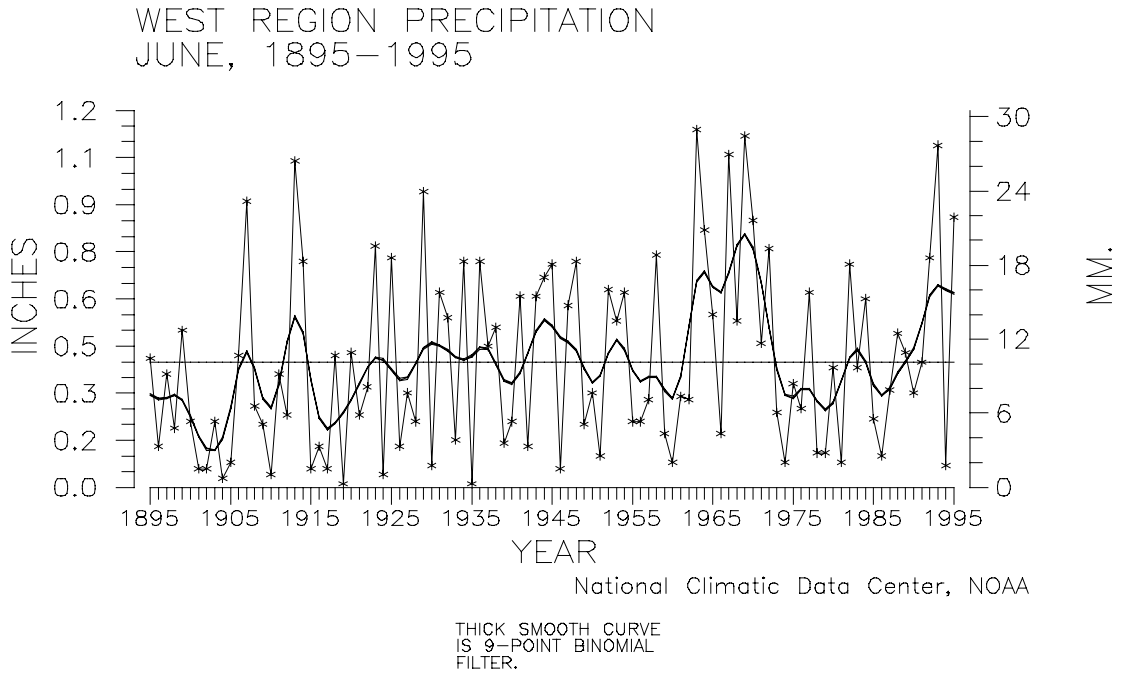

Figure 14